

WHAT IS CLAIMED IS:

1. An ultrasonic clamp coagulator apparatus comprising:  
a housing;
- 5 an ultrasonic waveguide positioned within said housing, said ultrasonic waveguide having an end-effector extending distally from said housing;  
a clamp arm pivotally mounted on said housing, said clamp arm pivotable with respect to said end-effector for clamping tissue between said clamp arm and said end-effector, said clamp arm comprising:
- 10 a top surface, said top surface comprising at least one hole;  
a bottom surface opposite said top surface, said bottom surface comprising at least one engaging surface;  
wherein said hole extends from said top surface to said engaging surface of said bottom surface; and
- 15 an actuating element within said housing, said actuating element connected to said clamp arm, said actuating element adapted to actuate said clamp arm pivotably with respect to said end-effector.
2. An ultrasonic clamp coagulator apparatus in accordance with Claim 1, said  
20 clamp arm further comprising:  
a slot extending from the proximal end of said clamp arm distally into said clamp arm, wherein said slot is straight from said proximal end of said clamp arm to said hole.
- 25 3. An ultrasonic clamp coagulator apparatus in accordance with Claim 2, wherein said clamp arm is curved from the distal end of said slot to the distal end of said clamp arm.

4. An ultrasonic clamp coagulator apparatus comprising:  
a housing;  
an ultrasonic waveguide positioned within said housing, said ultrasonic  
waveguide having an end-effector extending distally from said housing;
- 5 a clamp arm pivotally mounted on said housing, said clamp arm pivotable with  
respect to said end-effector for clamping tissue between said clamp arm and said  
end-effector, said clamp arm comprising:  
a top surface, said top surface comprising a plurality of holes;  
a bottom surface opposite said top surface, said bottom surface  
10 comprising a plurality of engaging surfaces;  
wherein said plurality of holes extend from said top surface to said plurality  
of engaging surfaces of said bottom surface; and  
an actuating element within said housing, said actuating element connected to said  
clamp arm, said actuating element adapted to actuate said clamp arm pivotably  
15 with respect to said end-effector.
5. An ultrasonic clamp coagulator apparatus in accordance with Claim 4, said  
clamp arm further comprising:  
a slot extending from the proximal end of said clamp arm distally into said clamp  
20 arm, wherein said slot is straight from said proximal end of said clamp arm to the  
most proximal of said plurality of holes.
6. An ultrasonic clamp coagulator apparatus in accordance with Claim 5,  
wherein said clamp arm is curved from the distal end of said slot to the distal end  
25 of said clamp arm.
7. An ultrasonic clamp coagulator apparatus in accordance with Claim 6,  
wherein said slot is substantially T-shaped.

8. An ultrasonic clamp coagulator apparatus comprising:  
a housing;  
an ultrasonic waveguide positioned within said housing, said ultrasonic waveguide having an end-effector extending distally from said housing;
- 5 a clamp means for clamping tissue between said clamp arm and said end-effector;  
and  
an actuator connected to said clamp means, said actuator adapted to move said clamp means with respect to said end-effector.
- 10 9. An ultrasonic clamp coagulator apparatus comprising:  
a housing;  
an outer tube having a proximal end joined to said housing, and  
a distal end, said outer tube defining a longitudinal axis;  
an inner tube reciprocally positioned within said outer tube;
- 15 an ultrasonic waveguide positioned within said outer tube, said ultrasonic waveguide having an end-effector extending distally of said distal end of said outer tube, and  
a clamp arm pivotally mounted on said distal end of said outer tube for pivotal movement with respect to said end-effector for clamping tissue between said clamp arm and said end-effector, said clamp arm operatively connected to said inner tube  
20 so that reciprocal movement of said inner tube pivots said clamp arm, said clamp arm comprising:  
a top surface, said top surface comprising at least one hole;  
a bottom surface opposite said top surface, said bottom surface comprising  
25 at least one engaging surface;  
wherein said hole extends from said top surface to said engaging surface of said bottom surface.

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10. An ultrasonic clamp coagulator apparatus in accordance with Claim 9, said clamp arm further comprising:

a slot extending from the proximal end of said clamp arm distally into said clamp arm, wherein said slot is straight from said proximal end of said clamp arm to the most proximal of said plurality of holes.

11. An ultrasonic clamp coagulator apparatus in accordance with Claim 10, wherein said clamp arm is curved from the distal end of said slot to the distal end of said clamp arm.

12. An ultrasonic clamp coagulator apparatus in accordance with Claim 10, wherein said slot is substantially T-shaped.

13. An ultrasonic clamp coagulator apparatus comprising:

a housing;

an outer tube having a proximal end rotatably joined to said housing, and a distal end, said outer tube defining a longitudinal axis about which said outer tube is rotatable;

an inner tube reciprocally positioned within said outer tube;

an ultrasonic waveguide positioned within said inner tube and having an end-effector extending distally of said distal end of said outer tube; and

a clamp arm pivotally mounted on said distal end of said outer tube for pivotal movement with respect to said end-effector for clamping tissue between said clamp arm and said end-effector, said clamp arm being pivotable about a pivot axis

perpendicular to said longitudinal axis, said clamp arm comprising:

a top surface, said top surface comprising at least one hole;

a bottom surface opposite said top surface, said bottom surface comprising at least one engaging surface;

wherein said hole extends from said top surface to said engaging surface of said bottom surface.

14. An ultrasonic clamp coagulator apparatus in accordance with Claim 13, said clamp arm further comprising:

a slot extending from the proximal end of said clamp arm distally into said clamp arm, wherein said slot is straight from said proximal end of said clamp arm to the

5 most proximal of said plurality of holes.

15. An ultrasonic clamp coagulator apparatus in accordance with Claim 14, wherein said clamp arm is curved from the distal end of said slot to the distal end of said clamp arm.

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16. An ultrasonic clamp coagulator apparatus in accordance with Claim 15, wherein said slot is substantially T-shaped.

17. An ultrasonic clamp coagulator apparatus in accordance with Claim 16, said clamp arm further comprising a tissue pad, said tissue pad comprising a T-shaped protrusion, said protrusion insertable into said substantially T-shaped slot of said clamp arm.

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